

CLAIMS:

1. An imaging apparatus, comprising:
 - a first substrate;
 - a second substrate;
 - a first imaging device mounted on the first substrate;
 - a second imaging device mounted on the second substrate; and
 - a glass tie bar having a first portion of the tie bar attached to the first substrate, and having a second portion of the tie bar attached to the second substrate.
2. The imaging apparatus of **claim 1**, wherein the first and second portions of the tie bar are attached to the first and second substrates by an adhesive cured by a mechanism other than heat.
3. The imaging apparatus of **claim 1**, wherein the first and second portions of the tie bar are attached to the first and second substrates by a light-curable adhesive.
4. The imaging apparatus of **claim 3**, wherein the light-curable adhesive is an ultraviolet light curable adhesive.
5. The imaging apparatus of **claim 1**, wherein the tie bar is formed of a glass having a coefficient of thermal expansion substantially similar to the coefficient of thermal expansion of the first and second imaging devices.
6. The imaging apparatus of **claim 5**, wherein the first and second portions of the tie bar are attached to the first and second substrates by a light-curable adhesive.

7. The imaging apparatus of **claim 6**, wherein:
the first and second imaging devices comprise semiconductor imaging
chips;
the tie bar is formed of a glass having a coefficient of thermal
expansion of approximately 3.25 parts per million per degree Celsius.

8. The imaging apparatus of **claim 5**, wherein:
the first imaging device extends beyond one edge of the first substrate;
and
the second imaging device extends beyond one edge of the second
substrate;
the first and second substrates are arranged so that the first and
second imaging devices are proximate one another.

9. An imaging apparatus, comprising:

a first imaging subarray comprising a first printed wiring board having a joining end and a plurality of first semiconductor imaging chips mounted on the first printed wiring board, including a first end chip, wherein a portion of the first end chip projects beyond the joining end of the first printed wiring board;

a second imaging subarray comprising a second printed wiring board having a joining end, and a plurality of second semiconductor imaging chips mounted on the second printed wiring board, including a second end chip, wherein a portion of the second end chip projects beyond the joining end of the second printed wiring board; and

a glass tie bar connecting the first and second imaging subarrays, wherein:

a first portion of the tie bar is attached to the first printed wiring board with a light-curable adhesive; and

a second portion of the tie bar is attached to the second printed wiring board with a light-curable adhesive.

10. The imaging apparatus of **claim 9**, wherein the first and second imaging subarrays are positioned so that the end chip of the first imaging subarray is adjacent the end chip of the second imaging subarray.

11. The imaging apparatus of **claim 10**, additionally comprising a second glass tie bar connecting the first and second imaging subarrays, wherein:

a first portion of the second tie bar is attached to the first printed wiring board with a light-curable adhesive; and

a second portion of the second tie bar is attached to the second printed wiring board with a light-curable adhesive.

12. The imaging apparatus of **claim 11**, wherein:
 - the first imaging chips are linearly aligned with one another on the first printed wiring board;
 - the second imaging chips are linearly aligned with one another on the second printed wiring board; and
 - the first and second imaging subarrays are positioned so that the first and second imaging chips are linearly aligned with one another.
13. The imaging apparatus of **claim 12** wherein:
 - the end chip of the first semiconductor imaging chip projects approximately 0.015 inch beyond the joining end of the first printed wiring board; and
 - the second semiconductor imaging chip projects approximately 0.015 inch beyond the joining end of the second printed wiring board.
14. The imaging apparatus of **claim 13** wherein the tie bar is formed of glass having coefficient of thermal expansion substantially similar to the coefficient of thermal expansion of the first and second chips.
15. The imaging apparatus of **claim 13** wherein the glass has a coefficient of thermal expansion of approximately 3.25 parts per million per degree Celsius.
16. The imaging apparatus of **claim 11** wherein the glass tie bar is substantially transparent to the light appropriate for curing the light-curable adhesive.

17. A method of forming an imaging apparatus, the method comprising:

forming a first imaging subarray comprising a first printed wiring board having a joining end and a plurality of first semiconductor imaging chips mounted on the first printed wiring board, including a first end chip, wherein a portion of the first end chip projects beyond the joining end of the first printed wiring board;

forming a second imaging subarray comprising a second printed wiring board having a joining end and a plurality of second semiconductor imaging chips mounted on the second printed wiring board, including a second end chip, wherein a portion of the second end chip projects beyond the joining end of the second printed wiring board;

bringing the first imaging subarray into proximity with the second imaging subarray so that the first end chip is immediately adjacent the second end chip;

applying light-curable adhesive to the first printed wiring board and to the second printed wiring board;

placing a glass tie bar so that a first portion of the tie bar contacts the light-curable adhesive on the first printed wiring board, and a second portion of the tie bar contacts the light-curable adhesive on the second printed wiring board; and

directing light onto the light-curable adhesive to cure the light-curable adhesive.

18. The method of **claim 17**, wherein the step of directing light onto the light-curable adhesive comprises directing light through the glass tie bar to the light-curable adhesive.

19. The method of **claim 17**, wherein the step of directing light onto the light-curable adhesive comprises directing ultraviolet light onto the light-curable adhesive.